

**REMARKS**

Claims 1-47 are pending. Claims 1, 2, 4-8, 14, 16, 25, 29, and 31 have been amended.

Reconsideration of the application, as amended, is requested.

Support for the amendments to the claims is inherent, or can be found, for example, on page 2, lines 10-13, or page 3, lines 15-17.

**§ 103 Rejections**

Claims 1-47 stand rejected under 35 USC § 103(a) as being unpatentable over McCullough et al. (US 6,344,270) in view of Maschinenkunde (English Translation).

The rejection of claims 1-47 under 35 USC § 103(a) as being unpatentable over ‘270 (McCullough et al.) in view of Maschinenkunde (English Translation) should be withdrawn.

Applicants in amended independent claim 1, claim a metal-cladded metal matrix composite wire comprising:

- a metal matrix composite wire having an exterior surface, the metal matrix composite wire comprising:

- at least one tow, wherein the tow comprises a plurality of continuous fibers that are oriented longitudinally with respect to each other, the fibers comprising at least one of ceramic or carbon;

- a metal matrix, wherein each tow is positioned within the metal matrix; and

- a metal cladding covering and contacting the exterior surface of the metal matrix composite wire, wherein the metal cladding has a melting point not greater than 1100°C,

- wherein the metal-cladded metal matrix composite wire, exhibits a roundness value of at least 0.95, a roundness uniformity value of not greater than 0.9%, and a diameter uniformity value of not greater than 0.2% over a length of least 100 meters.

Further, Applicants in amended independent claim 25, claim a metal-cladded aluminum matrix composite wire comprising:

- a aluminum matrix composite wire having an exterior surface, the aluminum matrix composite wire comprising:

- at least one tow, wherein the tow comprises a plurality of continuous fibers that are oriented longitudinally with respect to each other, the fibers comprising at least one of ceramic or carbon;

- an aluminum matrix, wherein each tow is positioned within the aluminum matrix; and

a metal cladding covering and **contacting** the exterior surface of the aluminum matrix composite wire, wherein the metal cladding has a melting point not greater than 1100°C,

wherein the metal-cladded aluminum matrix composite wire, exhibits a roundness value of at least 0.98, a roundness uniformity value of not greater than 0.5%, and a diameter uniformity value of not greater than 0.2% over a length of least 100 meters.

It is said in the Office Action that '270 (McCullough et al.) teaches a composite wire or cable that includes fiber reinforced metal matrix composites comprising a core containing at least one tow comprising a plurality of substantially continuous, longitudinally positioned reinforcing fibers of ceramic or carbon which is encapsulated within a metal matrix (specific reference is made to col. 3, l. 31-45). It is also said in the Office Action that '270 (McCullough et al.) further teaches that the wire or cable may have a metal covering the metal matrix composite core (specific reference is made to col. 9, l. 21-65 and figures 4-5). Further, it is said in the Office Action that '270 (McCullough et al.) does not exemplify an embodiment wherein the metal matrix composite core comprises a metal cladding.

Mashinenkunde is said in the Office Action to form a cladding sheathing coating by extrusion on a composite wire or cable core containing a plurality of fibers providing seamless outer coatings having good dimensional accuracy, concentricity and good surface quality (specific reference is made to the first paragraph).

It is alleged in the Office Action that it would have been obvious to one of ordinary skill in the art to have modified the composite wire or cable of '270 (McCullough et al.) by following the teaching of Mashinenkunde of cladding the composite wire with the sheathing coating formed by extrusion, in order to have produced a wire having seamless outer coatings having good dimensional accuracy, concentricity and good surface quality. It is further said in the Office Action that it is well settled that the test of obviousness is not whether the features of one reference can be bodily incorporated into the structure of another and a proper inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein, and the overriding question to be determined is whether those concepts would suggest to one of ordinary skill in the art the modifications called for by the claims (specific

reference is made to *In re Van Beckum*, 169 USPQ 47 (CCPA 1971), *In re Bozek*, 163 USPQ 545 (CCPA 1969); *In re Richman*, 165 USPQ 509 (CCPA 1970); *In re Henley*, 112 USPQ 56 (CCPA 1956); *In re Sneed*, 218 USPQ 385 (Fed. Cir. 1983)).

Further, it is said in the Office Action that in response to the issue of whether the reference is nonanalogous art, it has been held that the determination that a reference is from a nonanalogous art is twofold. First, one decides if the reference is within the field of the inventor's endeavor. If it is not, one proceeds to determine whether the reference is reasonably pertinent to the particular problem with which the inventor was involved (specific reference is made to *In re Wood*, 202 USPQ 171, 174). It is said that in the instant case, both '270 (McCullough et al.) and *Mashinenkunde* are generally drawn to forming wire or cables that include a core containing a plurality of fibers having a metal covering the composite core.

It is also said in the Office Action that '270 (McCullough et al.) teaches that the wire or cable has a roundness value of at least 0.95, a roundness uniformity value of not greater than 1.5%, and a diameter uniformity value of not greater than 0.5% over a length of at least 100 meters (col. 1, l. 57 to col. 2, l. 6). '270 (McCullough et al.) is further said to exemplify embodiments wherein the roundness uniformity value is as low as 0.94% and the diameter uniformity value is 0.21% (specific reference is made to Table 1, runs 12 and 6, respectively).

The Office Action goes on to say that although the prior art does not exemplify embodiments having the claimed properties, it teaches the claimed properties as being maximum or minimum values with no upper or lower limit boundaries being specified. As such, it is alleged, it would have been obvious to one of ordinary skill in the art to have formed the metal-clad metal matrix composite wire having a roundness uniformity value lower than the 1.5% and a diameter uniformity value lower than the 0.5% including having values within the ranges claimed by Applicant. Furthermore, '270 (McCullough et al.) is said to exemplify embodiments having values that are so close that *prima facie* one skilled in the art would have expected them to have the same properties (specific reference is made to *Titanium Metals Corporation of America V. Banner*, 227 USPQ 773).

Further, in regard to claim 25, '270 (McCullough et al.) is said to teach what is set forth above but does not exemplify an embodiment wherein the roundness value is at least 0.98. However, it is said in the Office Action, as was set forth above, since '270 (McCullough et al.)

only teaches the minimum value for the roundness value of being at least 0.95, higher values including that claimed by Applicant would have been obvious.

Further, in response to Applicants response to the previous Office Action, it is stated in the instant Office Action that:

Applicant's arguments files 2-5-07 have been fully considered but they are not persuasive.

Applicant argues on the bottom of page 6 of the response filed 2-5-07 that Maschinenkunde does not provide "cladding" and that the sheathing of Maschinenkunde is not "cladded" to anything, let alone wire or cables within the "sheathing". Applicant concludes that even if '270 (McCullough) and Maschinenkunde were combined the result would not be Applicant's claimed invention which requires a metal-cladded composite having a metal cladding covering the exterior surface of the metal matrix core.

However, Applicant has not defined "cladded" or "cladding" having any particular structure of properties. As is demonstrated from the definition of "cladding" from dictionary.com, clad and cladding may be defined as:

1. To sheathe or cover (a metal) with a metal.
2. To cover with a protective or insulating layer of other material.

Since Maschinenkunde teaches the cladding as a sheathing covering the cable core, it would meet the definition of being a cladded layer and/or cladding such as is claimed.

While not agreeing with the comments in the Office Action in response to Applicants' previous response, claims 1 and 25 have been amended to clarify that the metal cladding covers and contacts the exterior surface of the metal matrix composite wire or aluminum matrix composite wire, as applicable. Maschinenkunde does not teach, for example, sheathing a wire (versus, for example, sheathing a cable) such that a metal sheathing covers and contacts the exterior surface of the wire. Hence, even if '270 (McCullough et al.) were combined with Maschinenkunde, the result would not be Applicants' claimed invention.

Claims 2-24 depend directly or indirectly from claim 1. Claim 1 is patentable, for example, for at least the reasons given above (i.e., Applicants reserve the right to provide additional arguments, including disagreements with statements made in the Office Actions with respect to the prior art). Therefore, claims 2-24 should also be patentable.

Claims 26-47 depend directly or indirectly from claim 25. Claim 25 is patentable, for example, for at least the reasons given above (i.e., Applicants reserve the right to provide additional arguments, including disagreements with statements made in the Office Actions with respect to the prior art). Therefore, claims 26-47 should also be patentable.

In summary, the rejection of claims 1-47 under 35 USC § 103(a) as being unpatentable over '270 (McCullough et al.) in view of Maschinenkunde (English Translation) should be withdrawn.

In view of the above, it is submitted that the application, as amended, is in condition for allowance. Examination and reconsideration of the application, as amended, is requested.

Respectfully submitted,

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